

2-2.3 Typical Cross Sections

This sheet shows the structural elements of the roadway. It should not contain information concerning geometric elements, which should be shown on the layout sheets. Typical cross sections shall be a graphic representation of existing conditions, and the work to be performed as they predominantly appear within the station limits shown (not every item need be shown, but the major items or the majority of work). When the project consists of only a few sheets of plans, typical cross sections may be shown on the layout sheets.

Pavement structure (structural section) textural symbols, such as patterns or hatching shall not be used on the typical cross section. Existing sections shall be shown as dashed lines.

In most circumstances, the vertical scale of the sections should be exaggerated to clarify thickness of the various layers of the pavement structure. Thickness of the layers, within any one typical section, shall be shown proportionally. The vertical dimensions of the typical cross sections shall be expressed in hundredths of a foot. Where a new pavement structure is to be constructed, the thickness of each layer typically shall be rounded to the nearest 0.05-foot.

Horizontal roadway dimensions on the typical cross section shall be expressed in feet. Horizontal roadway dimensions should not be shown smaller than a hundredth of a foot for existing widths and to the nearest tenth of a foot for new construction. If the lane or shoulder width is a whole number, show the width without decimals of a foot. (Example: A 12 foot lane is shown as 12' not 12.0' or 12.00').

Horizontal roadway dimensions should be referenced to the alignment line or station line for roadways with one profile grade line, or station line for roadways with more than one profile grade line. The slope of the roadbed surface shall be identified by percent and an arrow showing downward direction of slope, or where applicable, show as "match existing slope." If dimensions vary, give minimum and maximum values. Side slopes are to be identified as a horizontal to vertical ratio, and can be further described with "or flatter." See Section 2-1.3 for additional instructions to describe side slopes.

Right of way lines should be shown as a reference when 15 feet or less from the catch point. Show right of way lines when the right of way is constant enough to be shown with one distance or a range. If a range is shown, give minimum and maximum values. Right of way lines shown on the typical cross sections do not replace or supersede showing right of way lines on the layout sheets. The right of way note described in Section 2-1.1 is not required on the typical cross section sheets.

The design designation, as defined in the Highway Design Manual Topic 103, shall be shown on the typical cross sections for all new, reconstruction, or rehabilitation projects. See "Typical Cross Section Examples" for the method of expressing the design designation.

Where pavement reinforcing fabric (PRF) is included as part of the pavement structure, show the limits of the PRF.

Items generally shown on the typical cross section include edge drains, railing, barriers, ditches, shoulder backing, curb, and dikes. When these and similar items are shown, identify the types used.

When there are multiple typical cross sections to be shown on a typical cross section sheet, the section with the lowest stationing is shown on the bottom of the sheet and the sections are to go up the sheet as the stationing advances. The typical sections shall be shown looking up station. Stationing of sections should be shown to the hundredths of a station where detailed accuracy is necessary. The beginning and end stations of each typical cross section would typically break at full 100 foot stations, unless the break in the typical sections requires more detailed accuracy. Stationing on multiple typical cross sections shall not overlap.

Pavement structure designation numbers, if used, are to be consistent with those shown on the layout sheets of the plans.

Where new surfacing is to be placed on existing pavement, the bottom of the new surfacing which is to be in contact with existing pavement shall be shown as a solid line.

Where the existing pavement structure is shown to be removed, the type of material and thickness of each layer shall be identified. Where the existing pavement structure was previously shown in metric units, the thickness of each layer shown shall be a conversion of the metric unit values (millimeters) to the U.S. customary unit value (hundredths of a foot).

If only one type of a specific item (dike, curb, etc.), existing or new construction, can be shown within the limits of the cross section, then show the type that occurs most within the distance of that cross section. Include a note such as: "Exact locations and types of dike and curb are shown on the layouts and in the summary of quantities sheets."

CHECKLIST FOR TYPICAL CROSS SECTION

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|---|---|
| <input type="checkbox"/> District, county and route TX=7.0, FT=3, WT=1, LV=10 (upper right corner of sheet) | <input type="checkbox"/> Label sheet(s) "NO SCALE," TX=8.75, FT=3, WT=2, LV=10. Draw sections proportionally |
| <input type="checkbox"/> Post Miles TX=7.0, FT=3, WT=1, LV=10 (upper right corner of sheet) | <input type="checkbox"/> Design designation (useful for future reference) – Show on first sheet of typical cross sections only |
| <input type="checkbox"/> CU No. and EA No. (lower right corner of sheet) TX=7.0, FT=3, WT=1, LV=10 | <input type="checkbox"/> Legend and list of abbreviations, on first sheet of cross sections (do not include applicable standard plans abbreviations as part of the listed abbreviations) |
| <input type="checkbox"/> Signature only included on Level 63. Date of signature and current registration seal information included on Level 10, (lower right corner of sheet). Drafting reviewers will attach signatures when project goes to PS&E. Text height should be 7, but the width can be squeezed to fit the area using element selection. If both names are long, the first name can be above the last name. FT=3, WT=1 | <input type="checkbox"/> Alignment line or station line – Layout line for walls, barriers, etc |
| <input type="checkbox"/> Information inserted in plan sheet development name block spaces in left margin of sheet. See Figures 2-10 and 2-11 in Section 2-1.6 of this manual for additional instructions. | <input type="checkbox"/> Stationing limits below each section, sections with lowest stationing limits at bottom of sheet with increasing station sections stacked above - Pavement width transitions shown where required |
| <input type="checkbox"/> The following notes shall be shown on the first sheet of the typical cross sections: <ol style="list-style-type: none"> 1. Dimensions of the pavement structures (structural sections) are subject to tolerances specified in the Standard Specifications. 2. Superelevation as shown or as directed by the Engineer. | <input type="checkbox"/> Profile grade point, widths of lanes, shoulders, medians, sidewalk, gutter, ditches, etc – Show variable dimensions with limits |
| | <input type="checkbox"/> Percent of cross slopes: traveled way, shoulders, paved median, gutter, etc |
| | <input type="checkbox"/> Slope rounding – Can be shown as detail |
| | <input type="checkbox"/> Benching and strutting (where applicable) |
| | <input type="checkbox"/> Right of way lines - Show as applicable to the specific project. Refer to the text within this section for additional directions. |
| | <input type="checkbox"/> Type, class and thickness of pavement, base and subbase |

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- ☐ Pertinent existing features, including existing pavement structures, barrier, railing, ditches, shoulder backing, etc
- ☐ Seal coats, except fog seals
- ☐ Dike with type identification
- ☐ Subsurface drains (where applicable)
- ☐ Curb types (include dimensions not shown on Standard Plans)